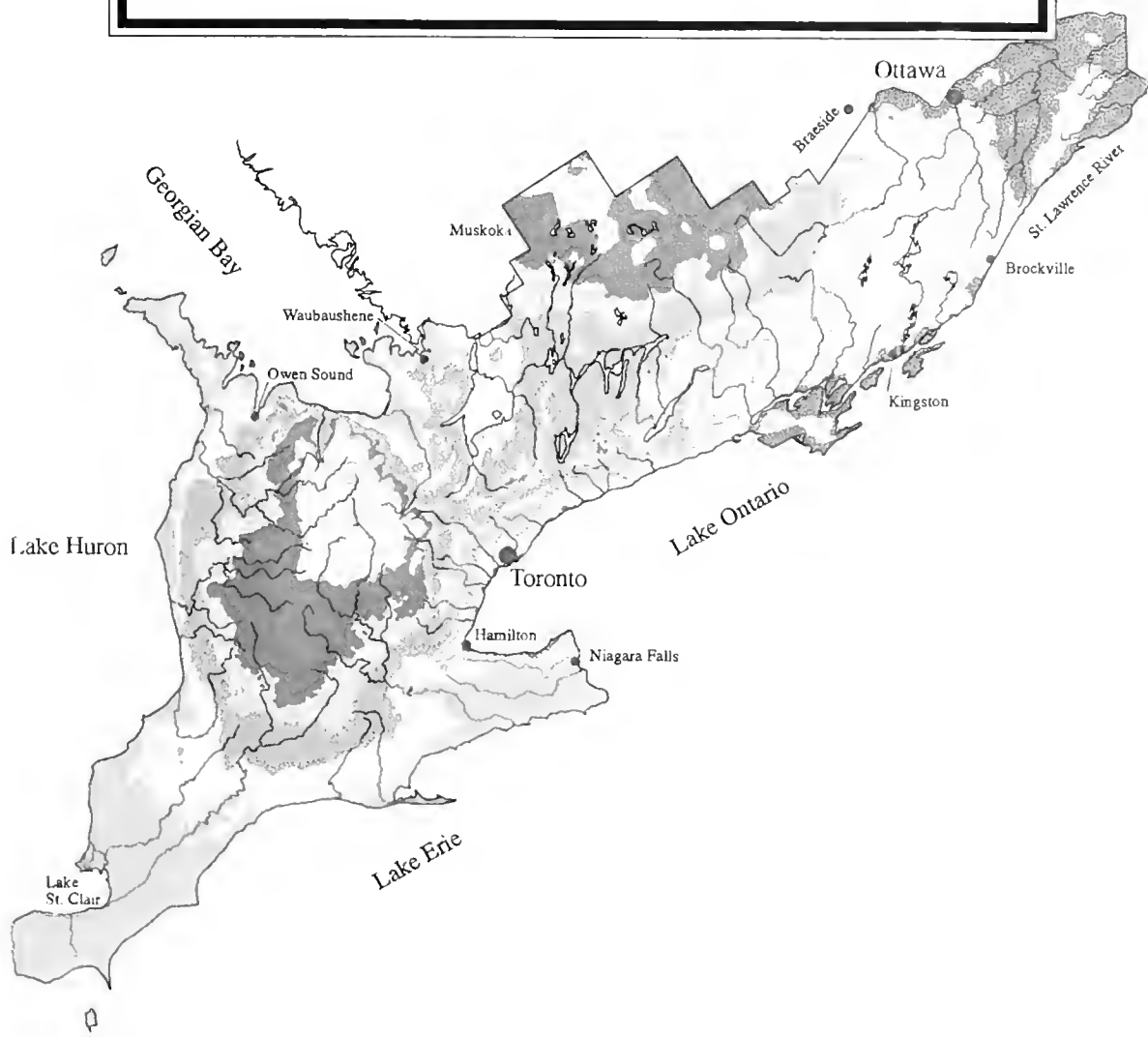


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# THE HYDROGEOLOGY OF SOUTHERN ONTARIO (FIGURES)



Ministry of Environment and Energy





Hydrogeology of Ontario  
Series (Report 1)

# THE HYDROGEOLOGY OF SOUTHERN ONTARIO

VOLUME 2  
(FIGURES)

BY

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**PREFACE**

This report describes the hydrogeology of southern Ontario in terms of the hydraulic parameters of various bedrock and overburden units, and the geologic conditions under which ground water flow systems operate. In addition, the report provides an assessment of the long-term ground water recharge and discharge, and an evaluation of ground water quality. The report is intended to provide basic hydrogeologic information that can be used for the wise management of the ground water resources in southern Ontario.

Toronto, June 1995



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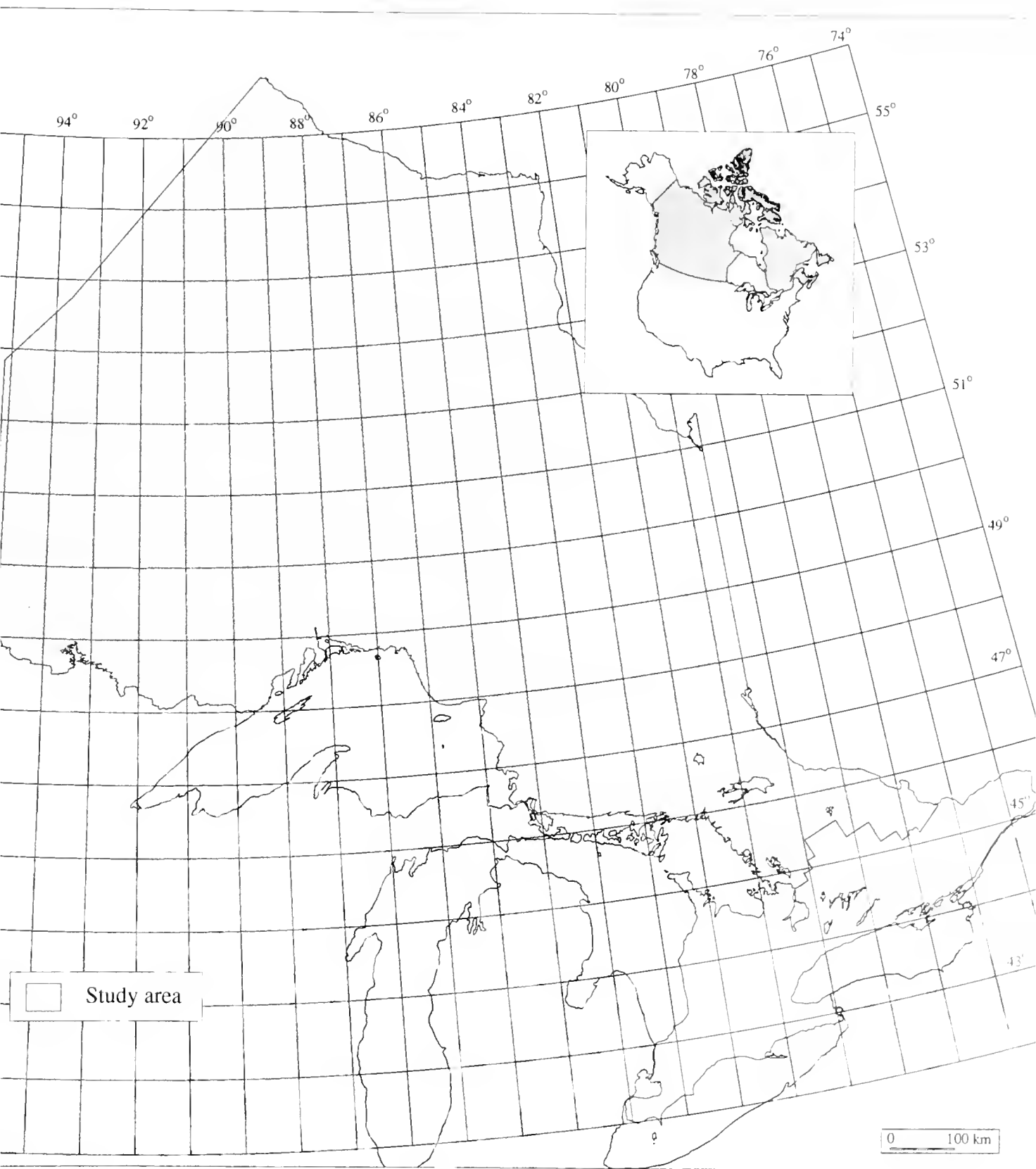


Figure 1. Location of the study area relative to other parts of Ontario.



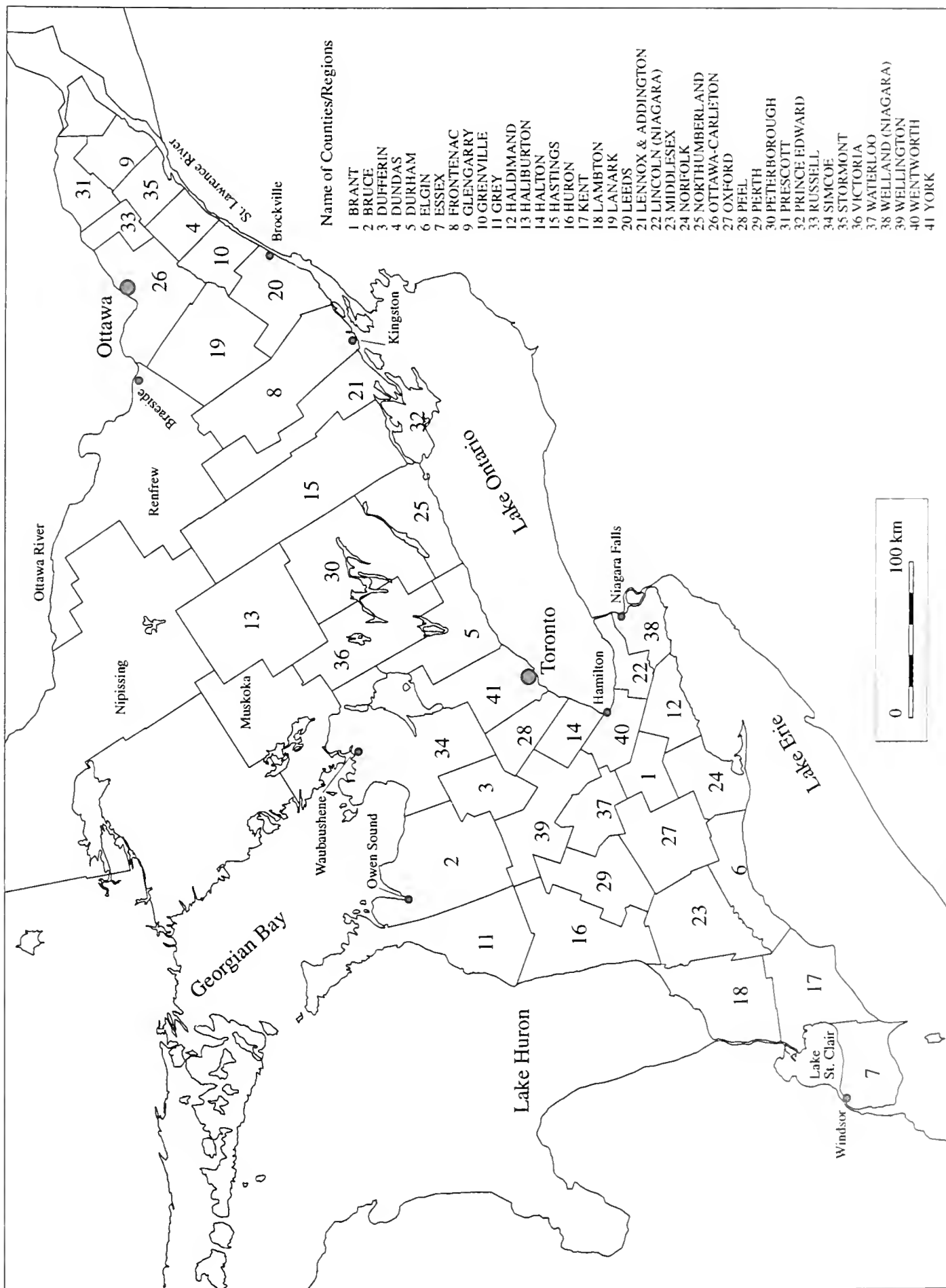


Figure 2. Map of southern Ontario showing the counties included in the study.



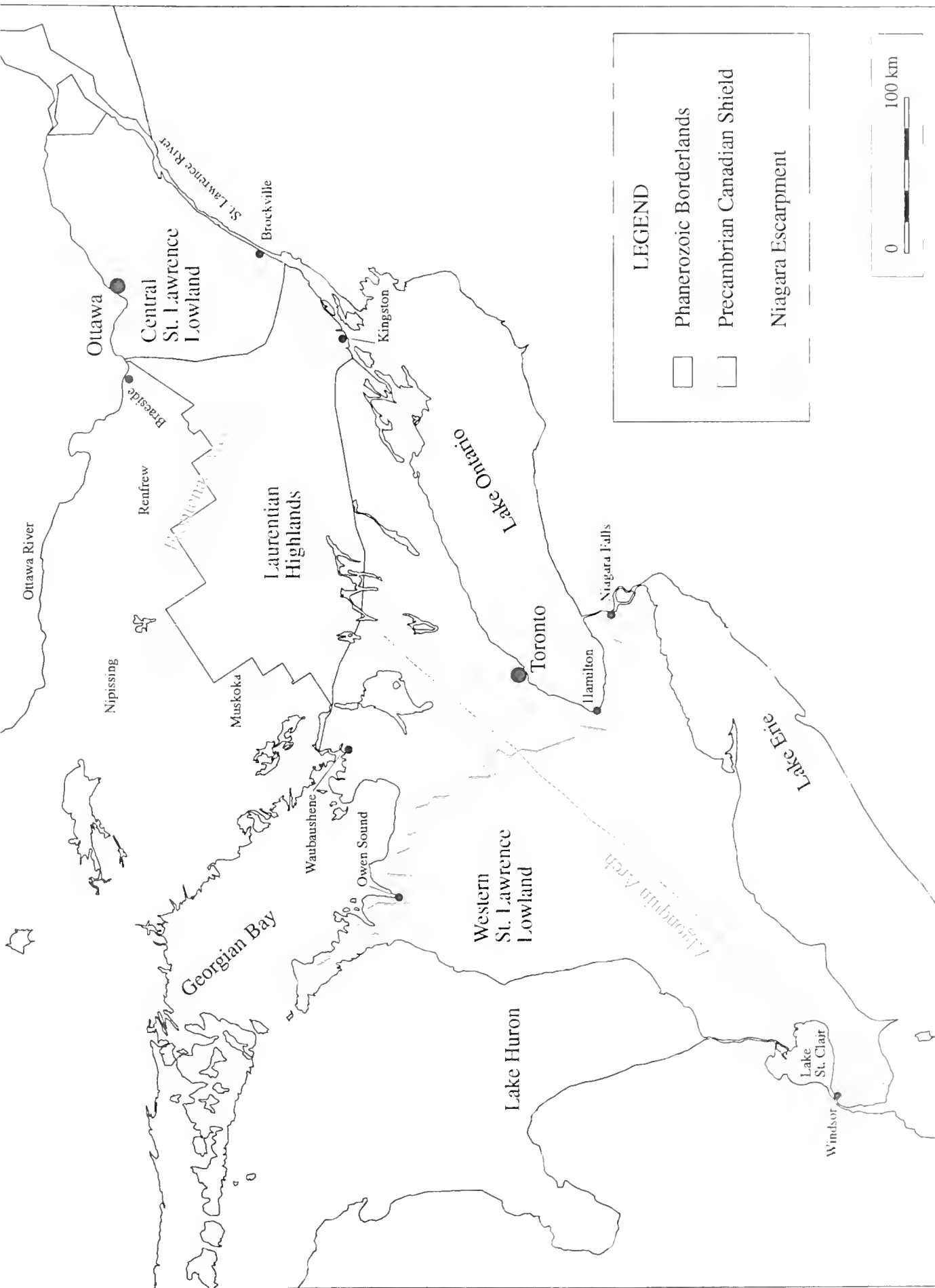


Figure 3. Physiographic regions in southern Ontario (from Thurston et al. 1992)



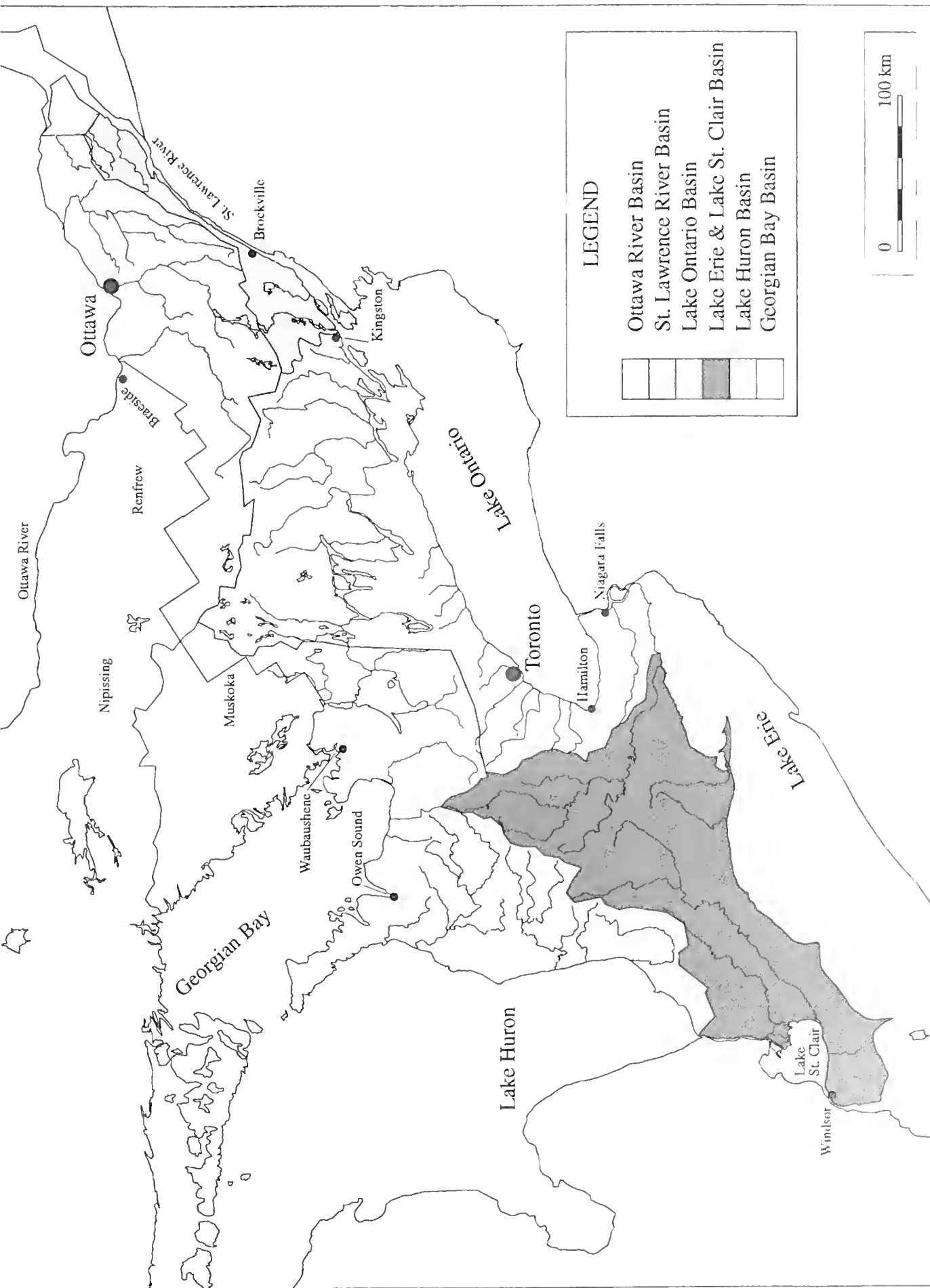
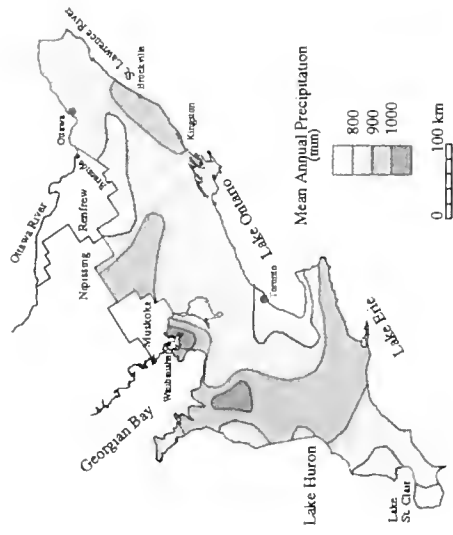


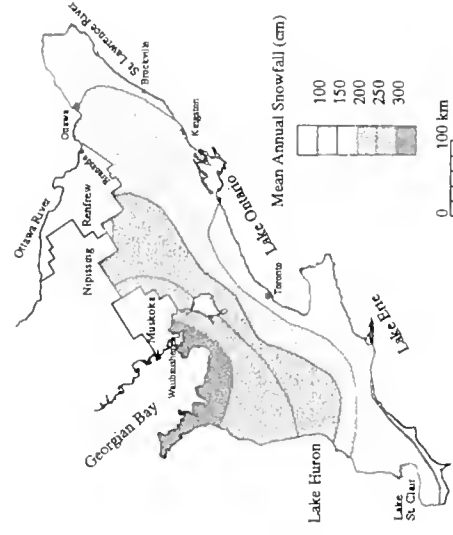
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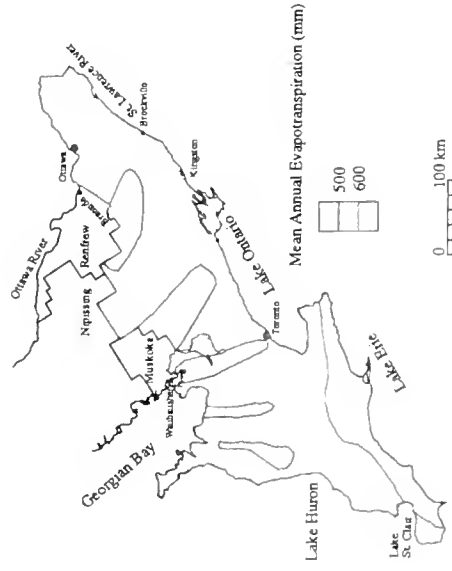




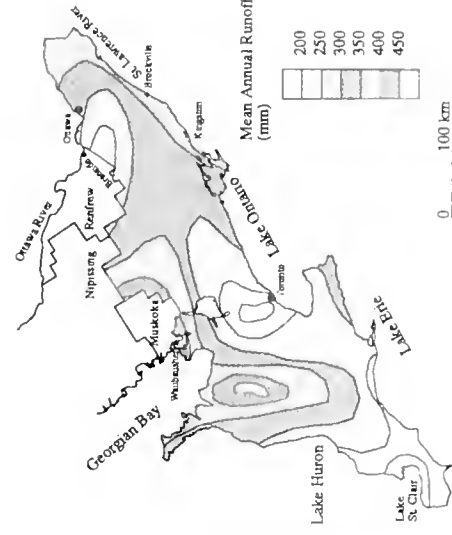
(a)



(b)



(c)



(d)

Figure 5. Mean annual precipitation (a), snowfall (b), evapotranspiration (c) and runoff (d) in southern Ontario (from MNR, 1984).



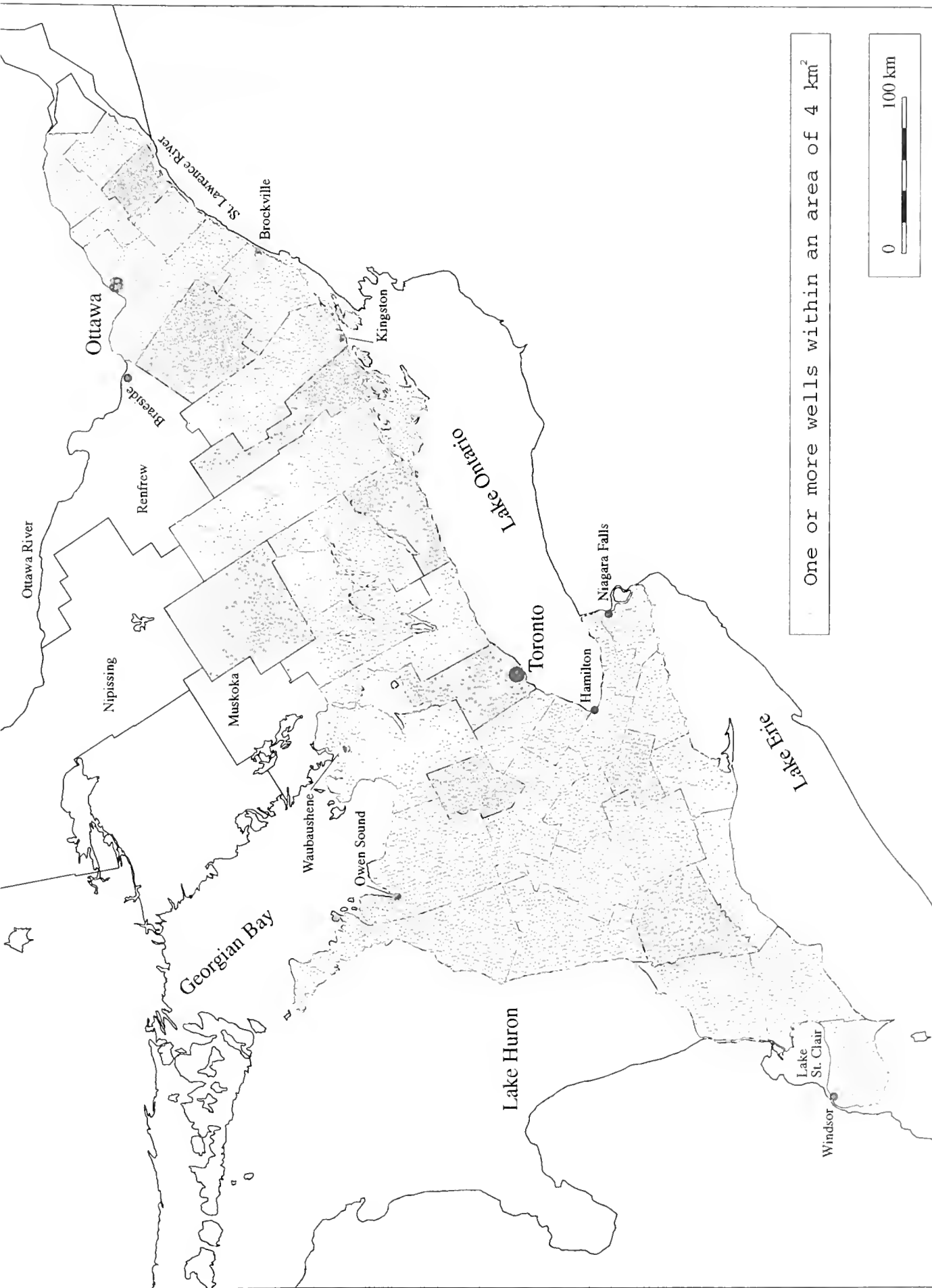


Figure 6. Locations of bedrock wells in southern Ontario.



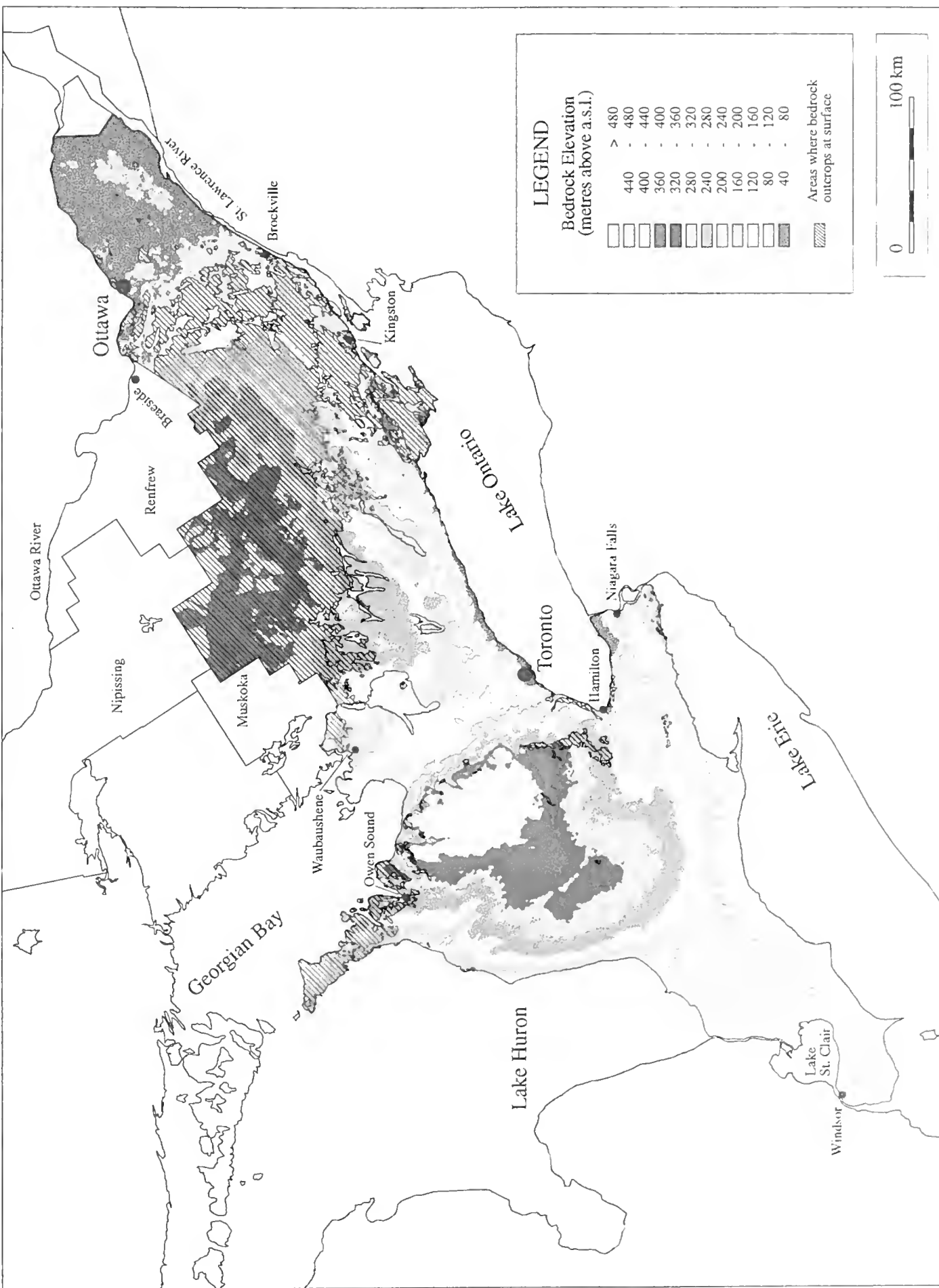


Figure 7. Bedrock elevation in southern Ontario.



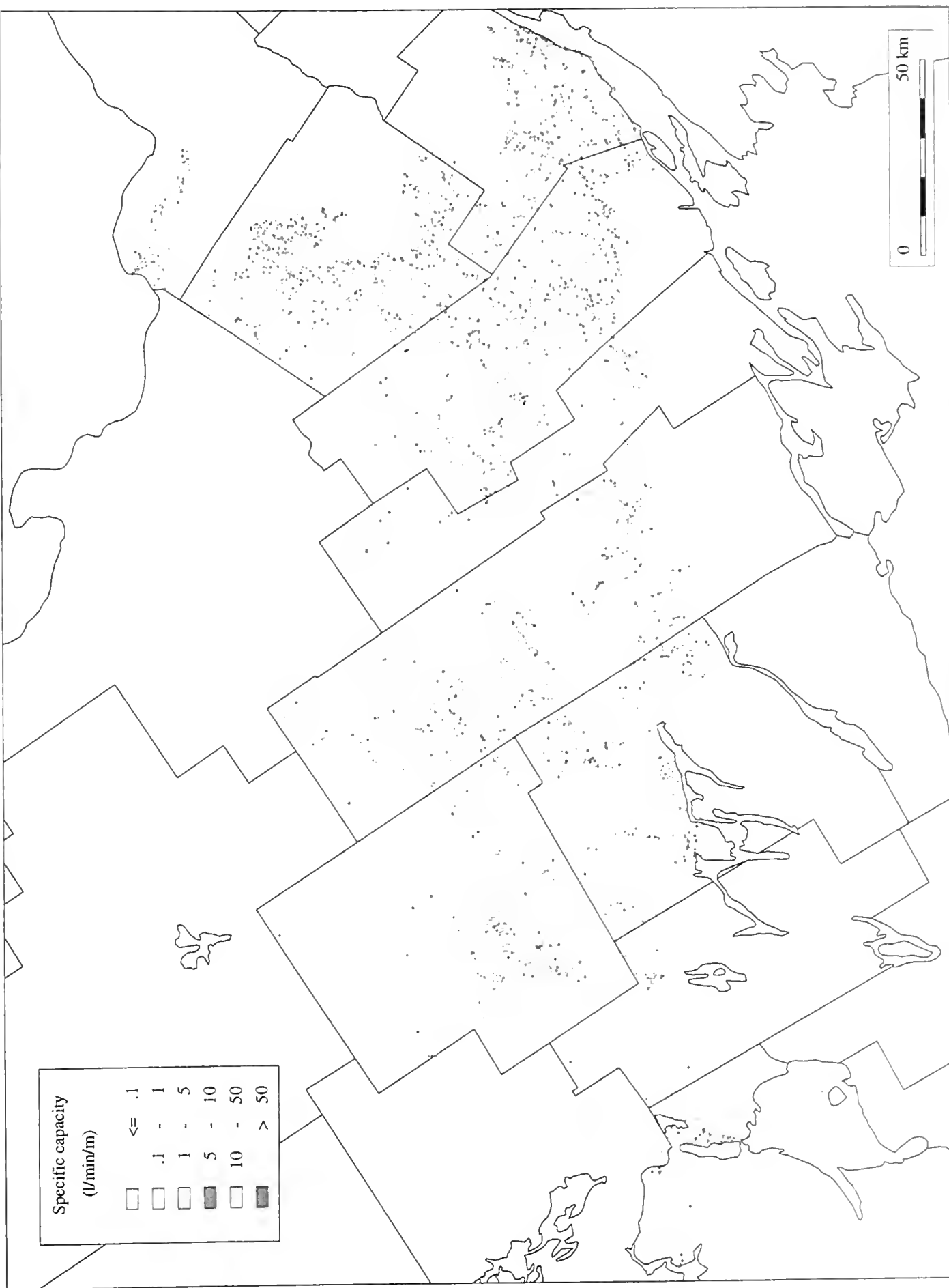


Figure 8. Ranges of specific capacities for wells completed in Precambrian rocks.





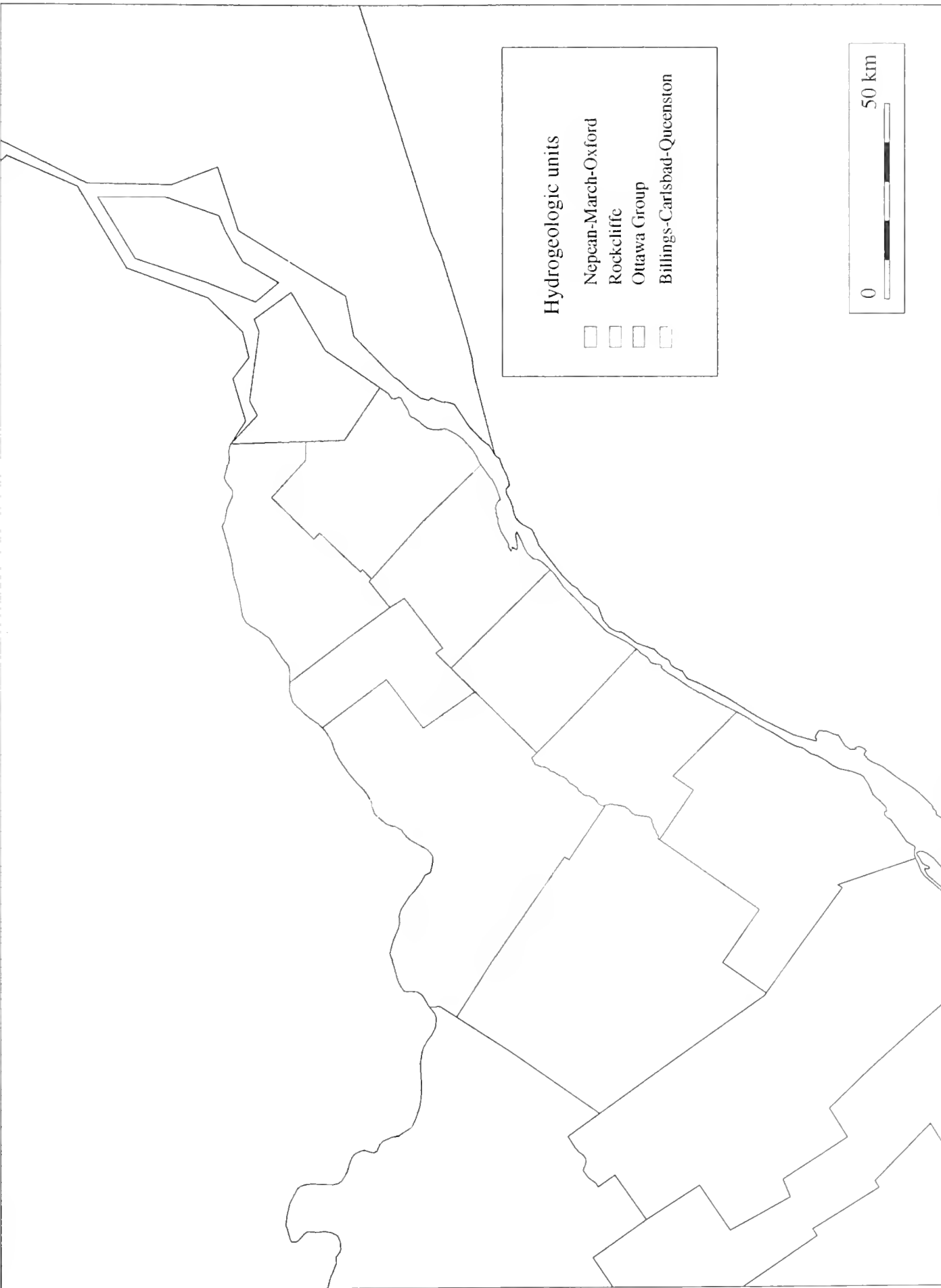


Figure 9. Bedrock hydrogeologic units in eastern Ontario.





Figure 10. Ranges of specific capacities for wells completed in the Nepean-March-Oxford Hydrogeologic unit.





Figure 11. Ranges of specific capacities for wells completed in the Simcoe Group hydrogeologic unit.





Figure 12. Ranges of specific capacities for wells completed in Blue Mountain-Georgian Bay and Queenston hydrogeologic units.





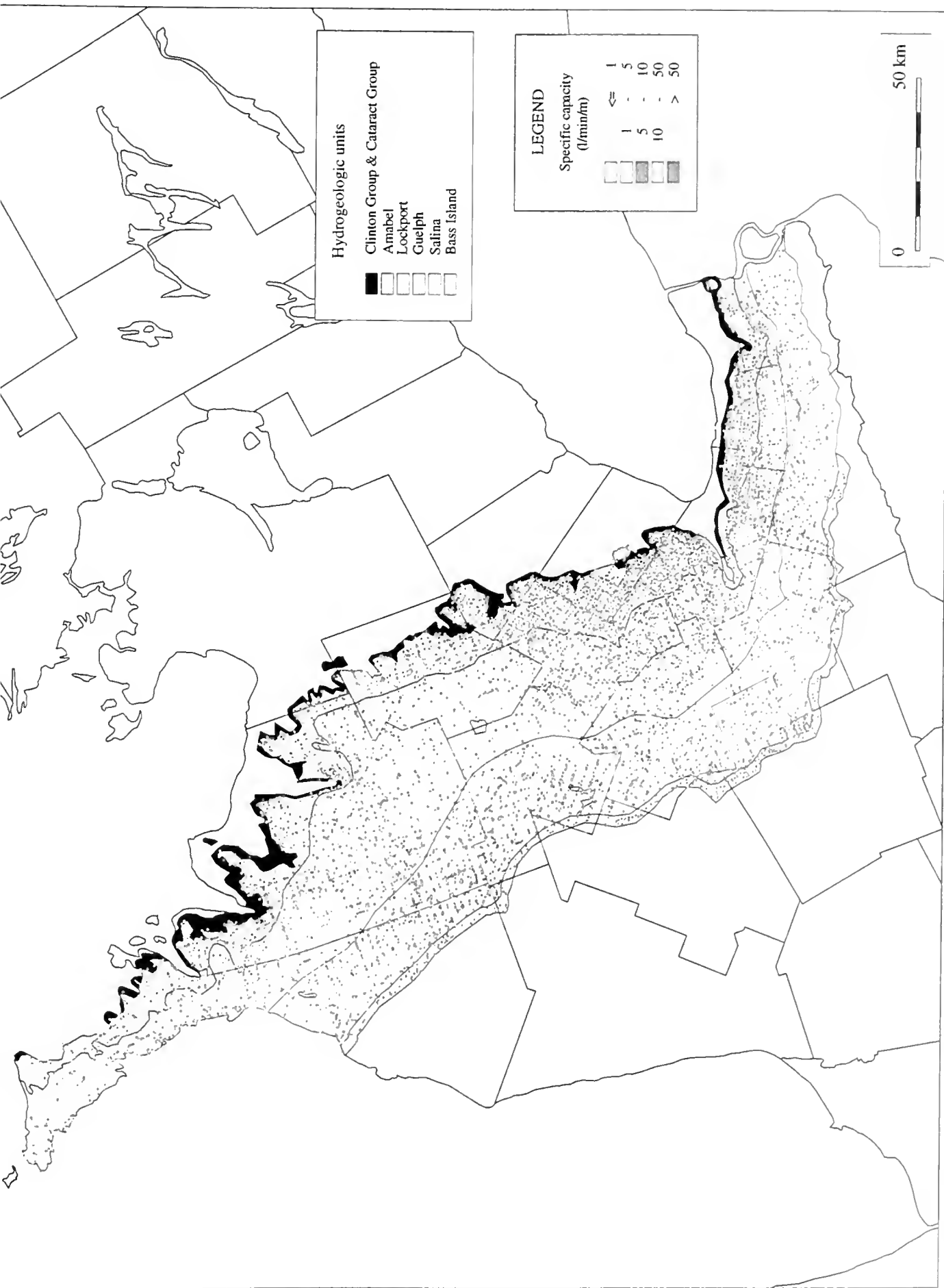


Figure 13. Ranges of specific capacities for wells completed in the Amabel-Lockport-Guelph, Salina and Bass Island hydrogeologic units.





Figure 14. Ranges of specific capacity values for wells completed in the Bois Blanc, Detroit River Group, Dundee, Hamilton Group and Kettle Point hydrogeologic units.



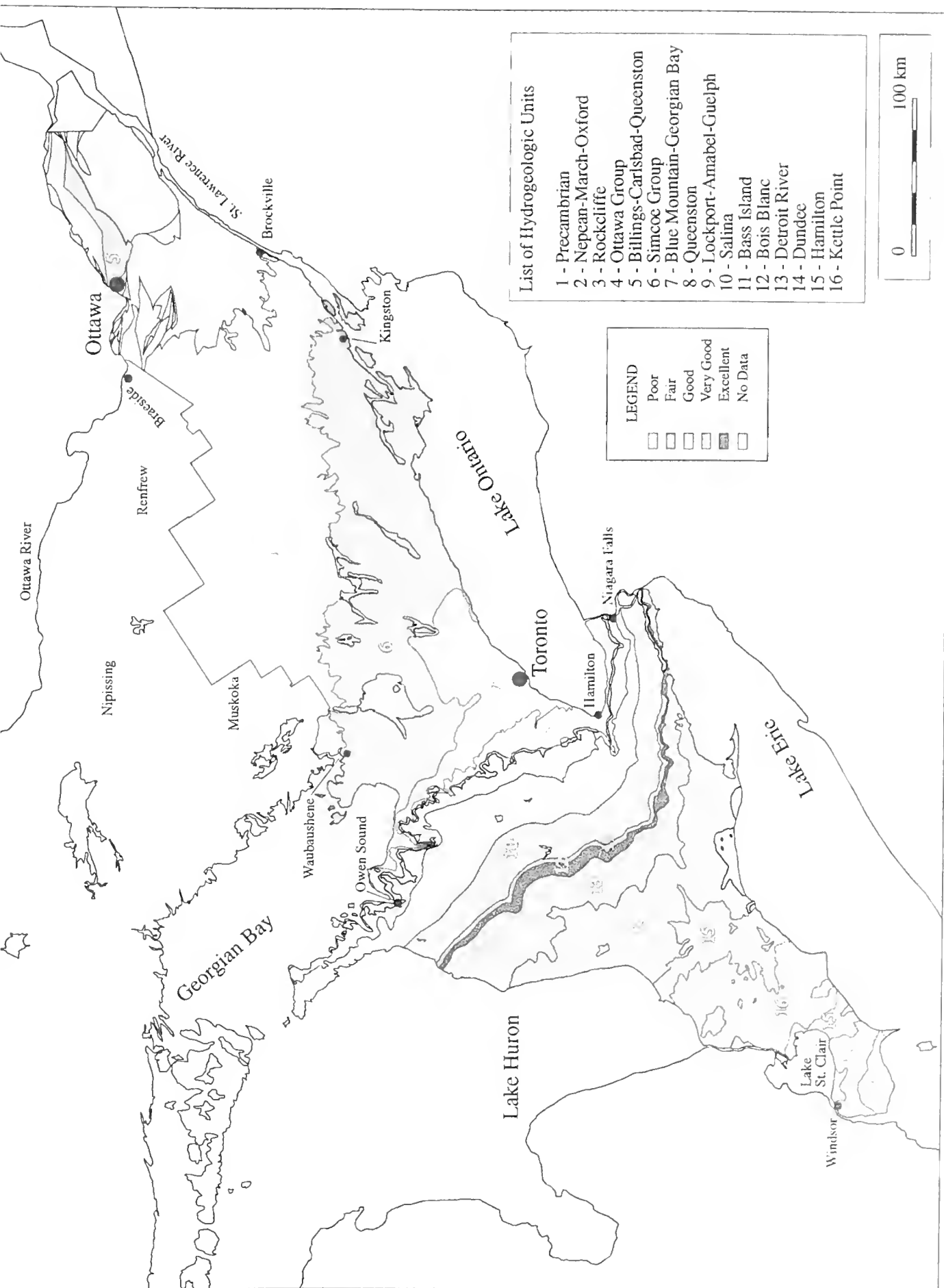


Figure 15. Water-yielding capabilities of bedrock hydrogeologic units in southern Ontario.





Figure 16. Correlation chart for southwestern Ontario (from Thurston et al, 1992).





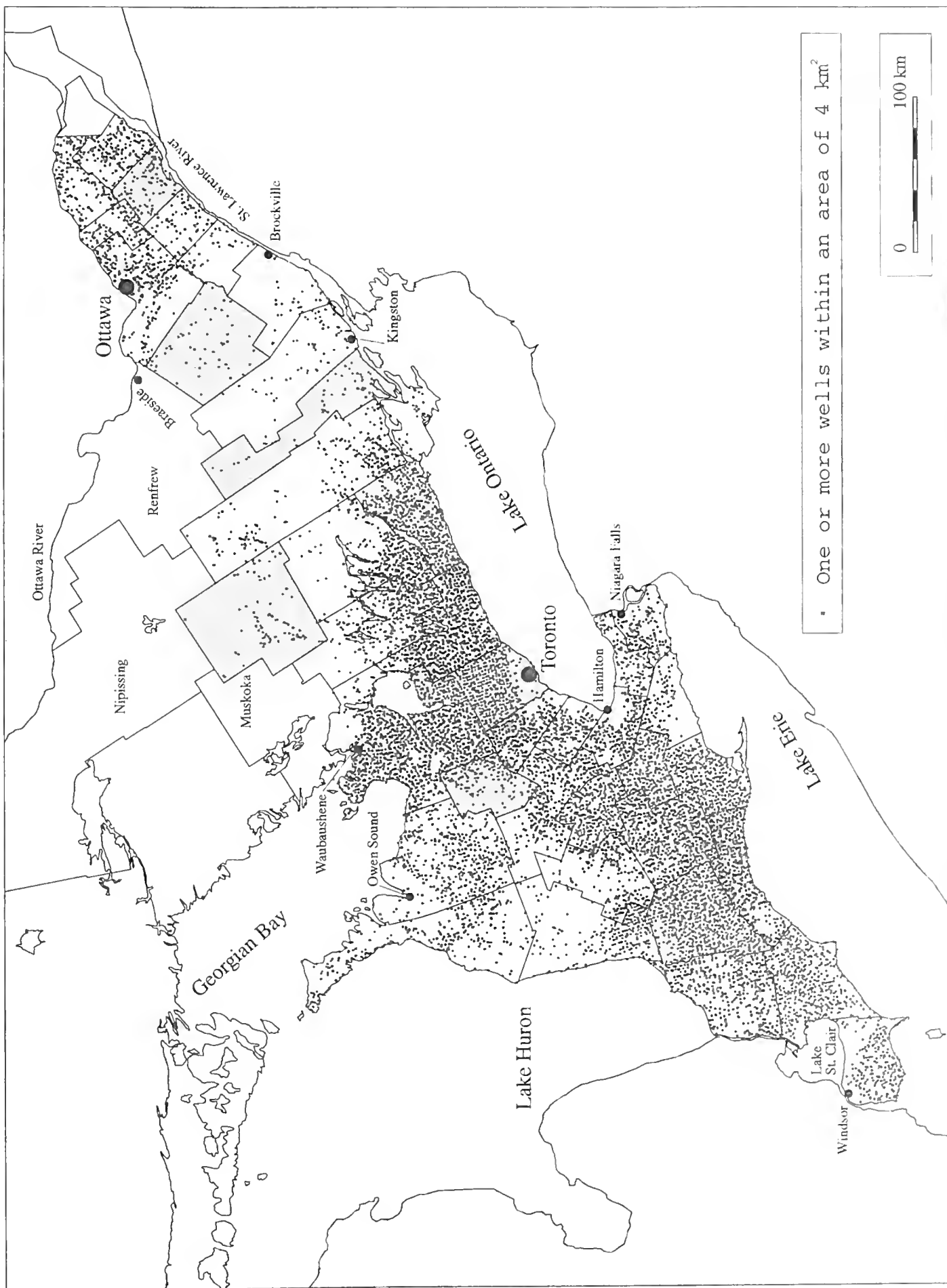


Figure 17. Locations of overburden wells in southern Ontario.



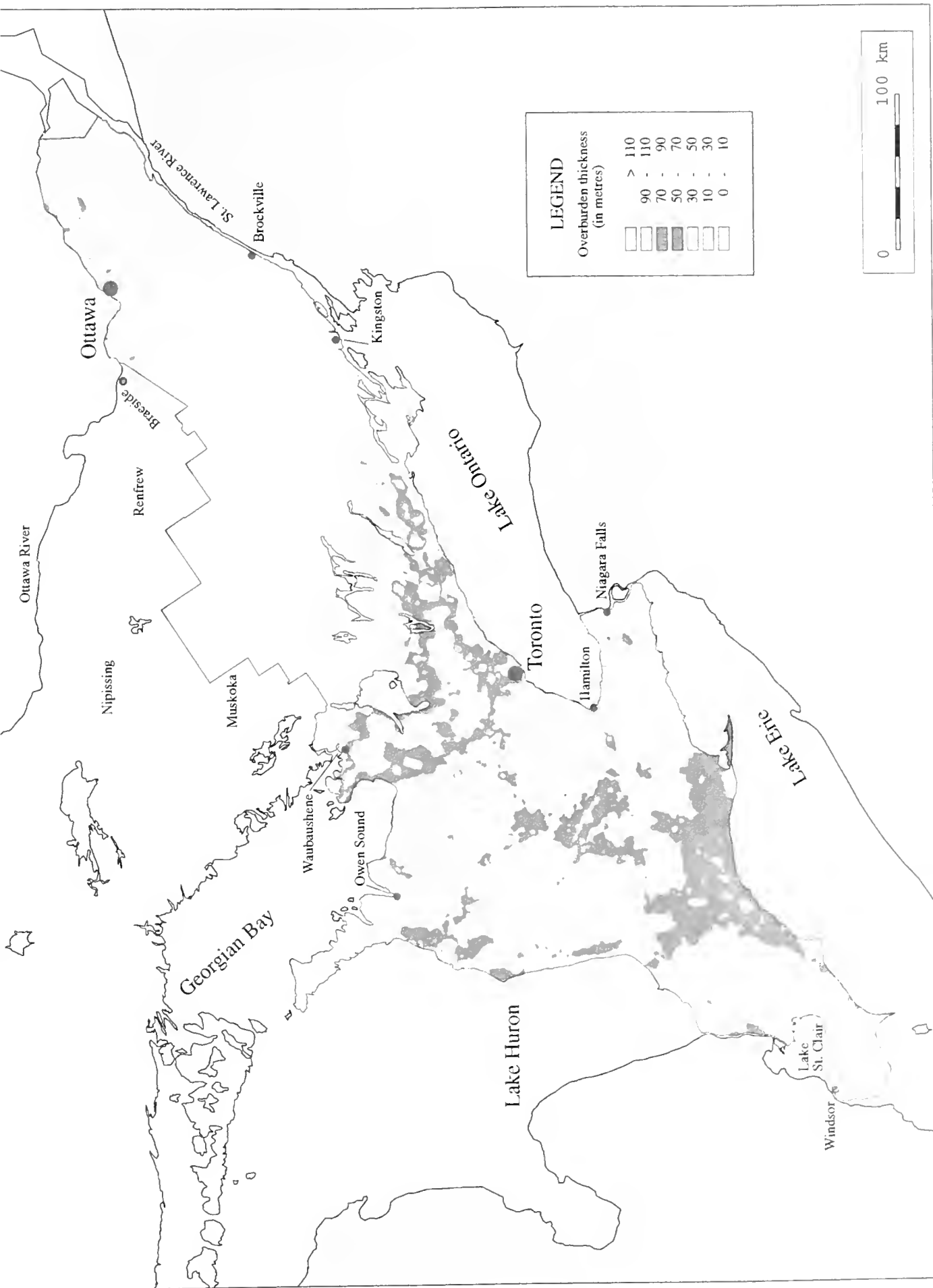


Figure 18. Overburden thickness in southern Ontario.



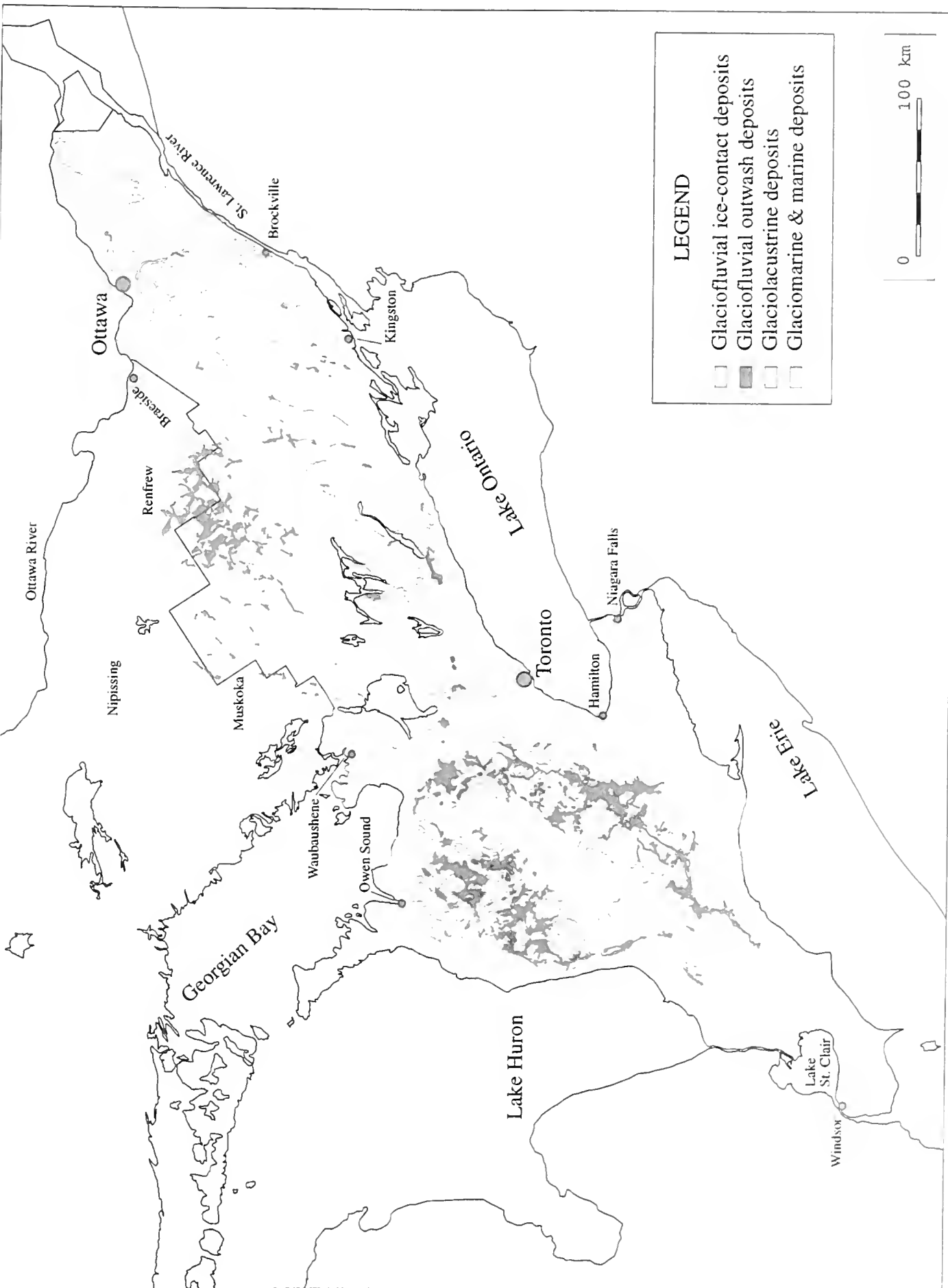


Figure 19. Areas where sand and gravel deposits outcrop at surface in southern Ontario.



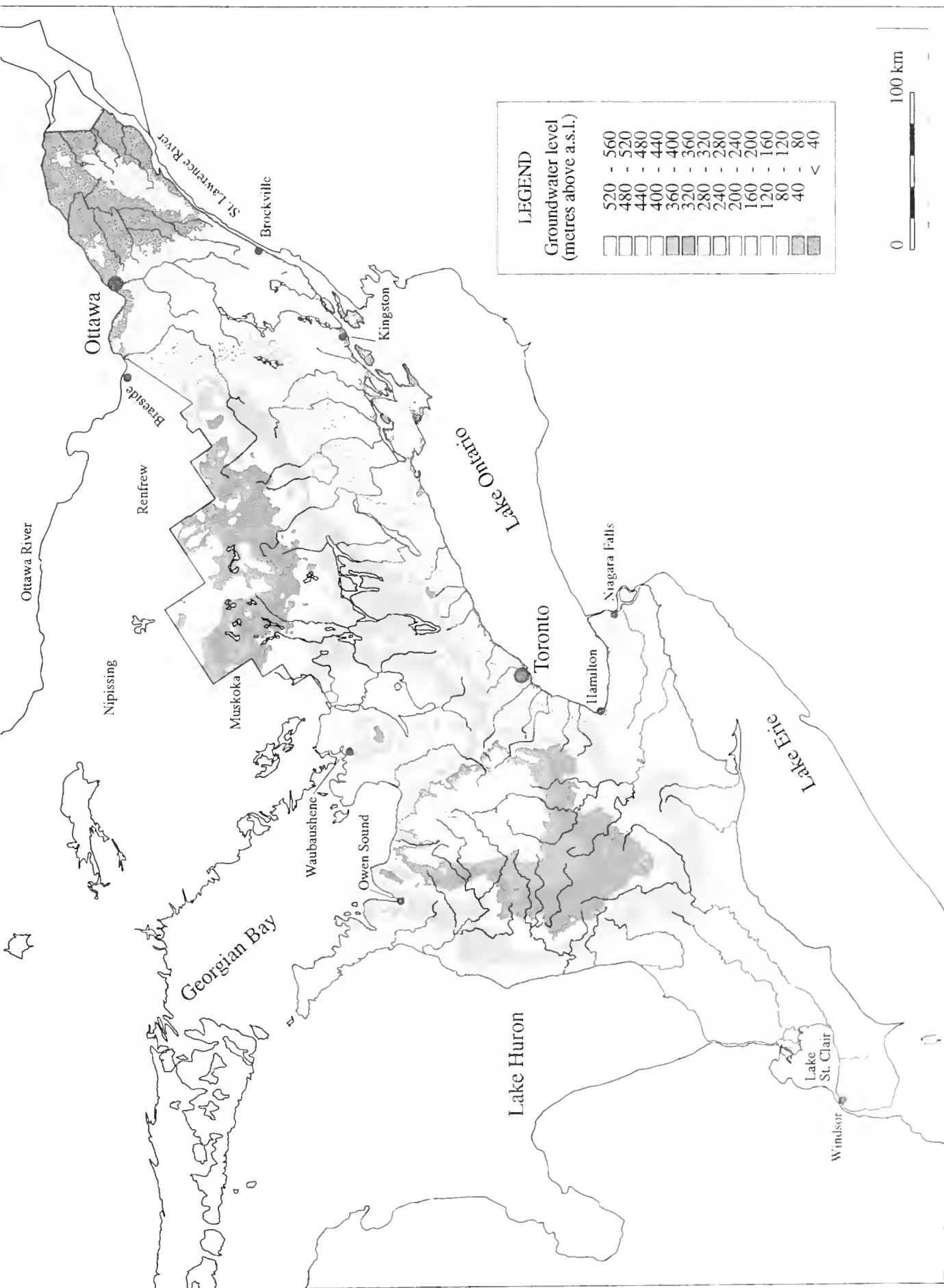


Figure 20. Groundwater level within the bedrock in southern Ontario.





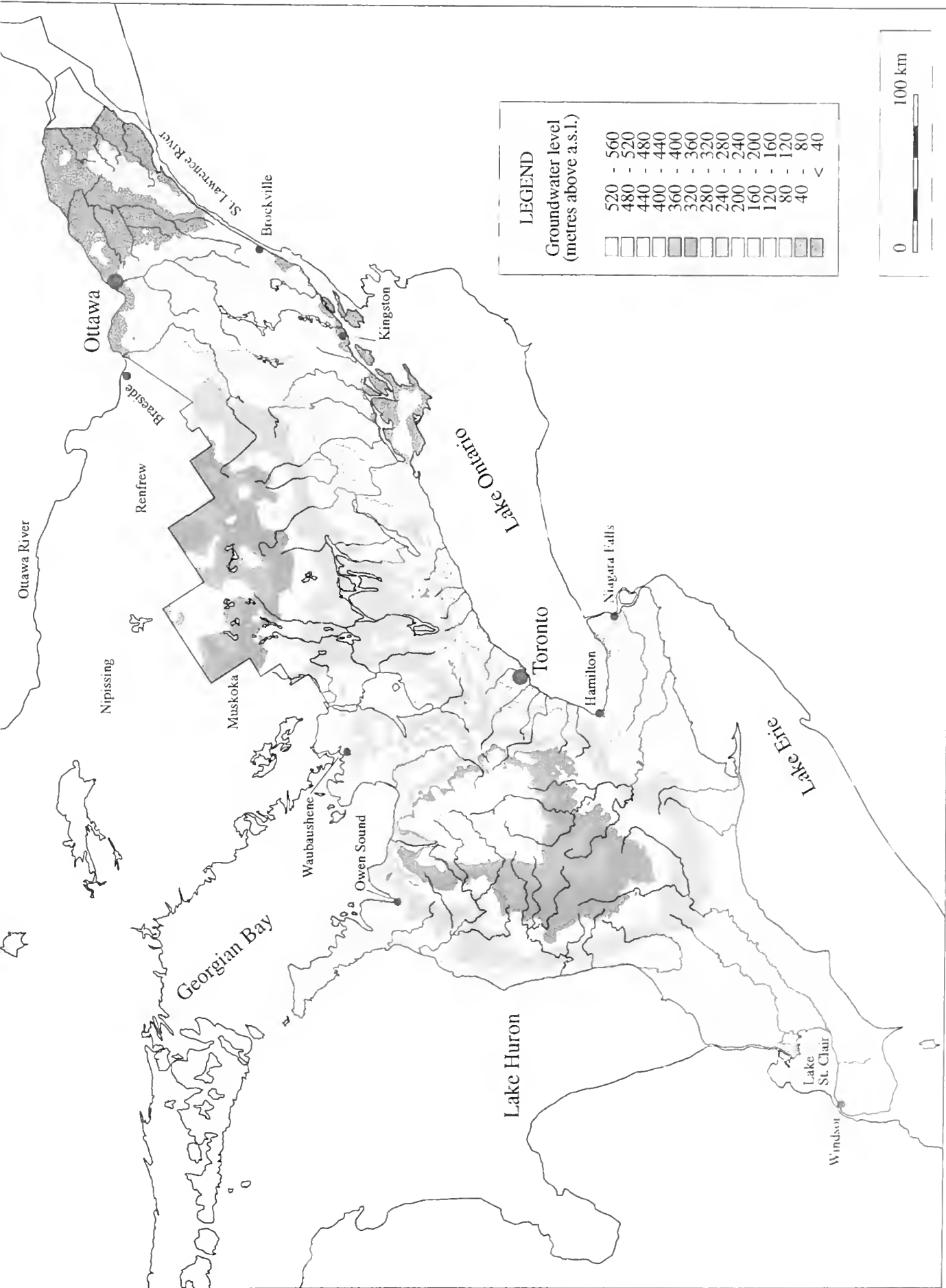


Figure 21. Groundwater level within the overburden in southern Ontario



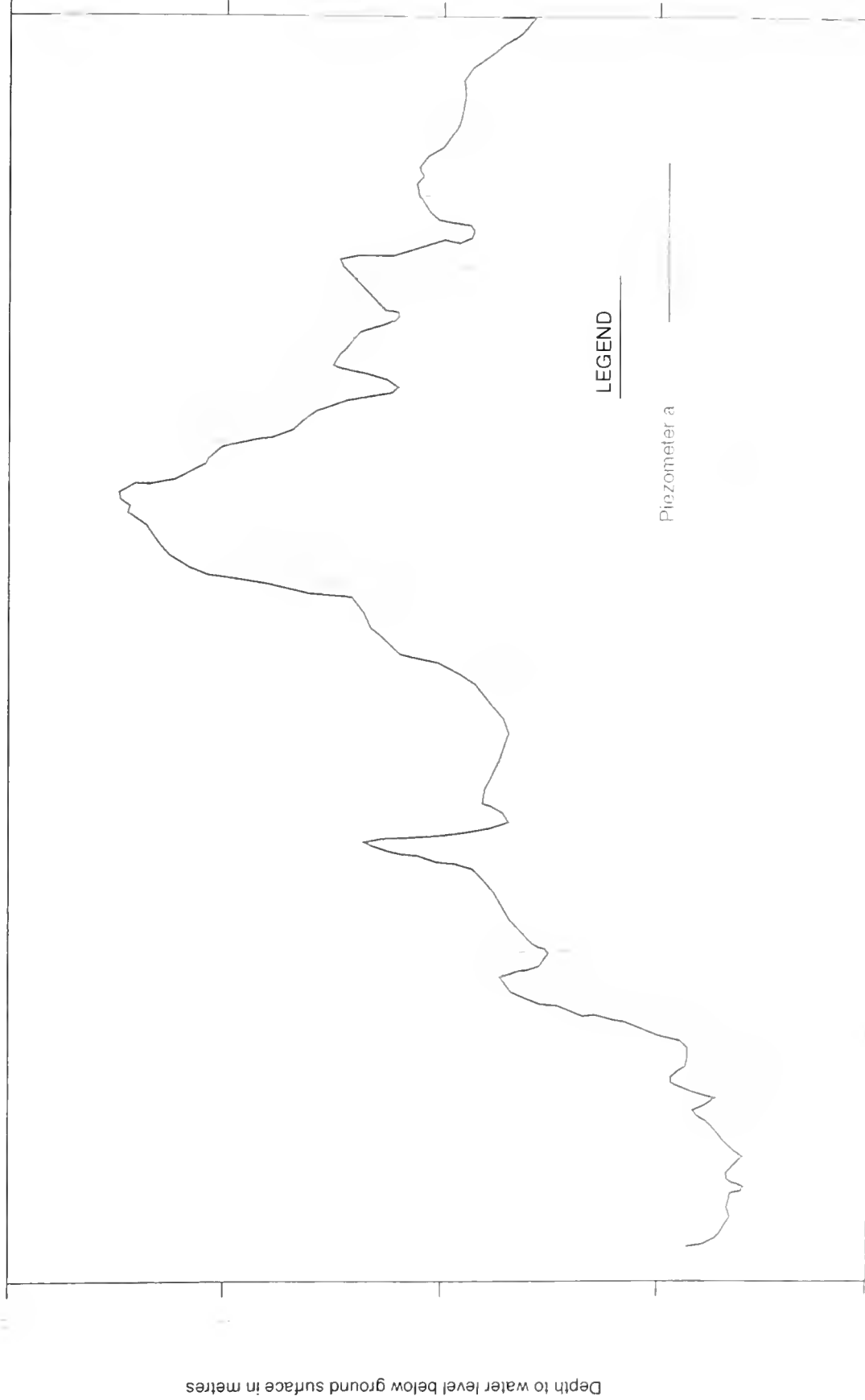
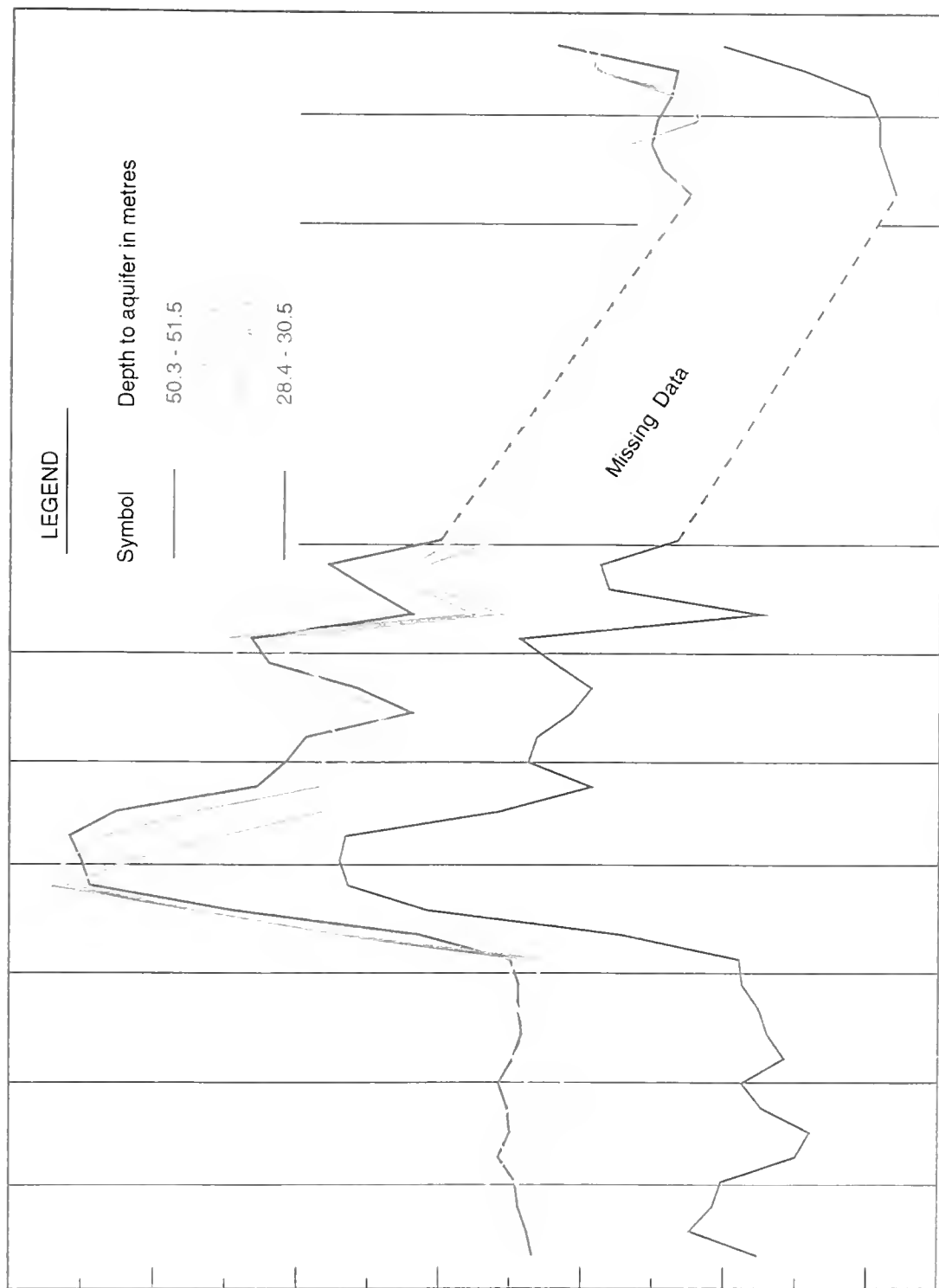


Figure 22. Hydrographs of water level fluctuations in observation well W-5A (piezometers a and b) during water year 1971-1972 (from Singer, 1974).





Static level in metres below ground surface

Figure 23. Static water level in well 1B during 1972 in the Blue Springs Creek watershed (from Cowan and Barouch, 1978).



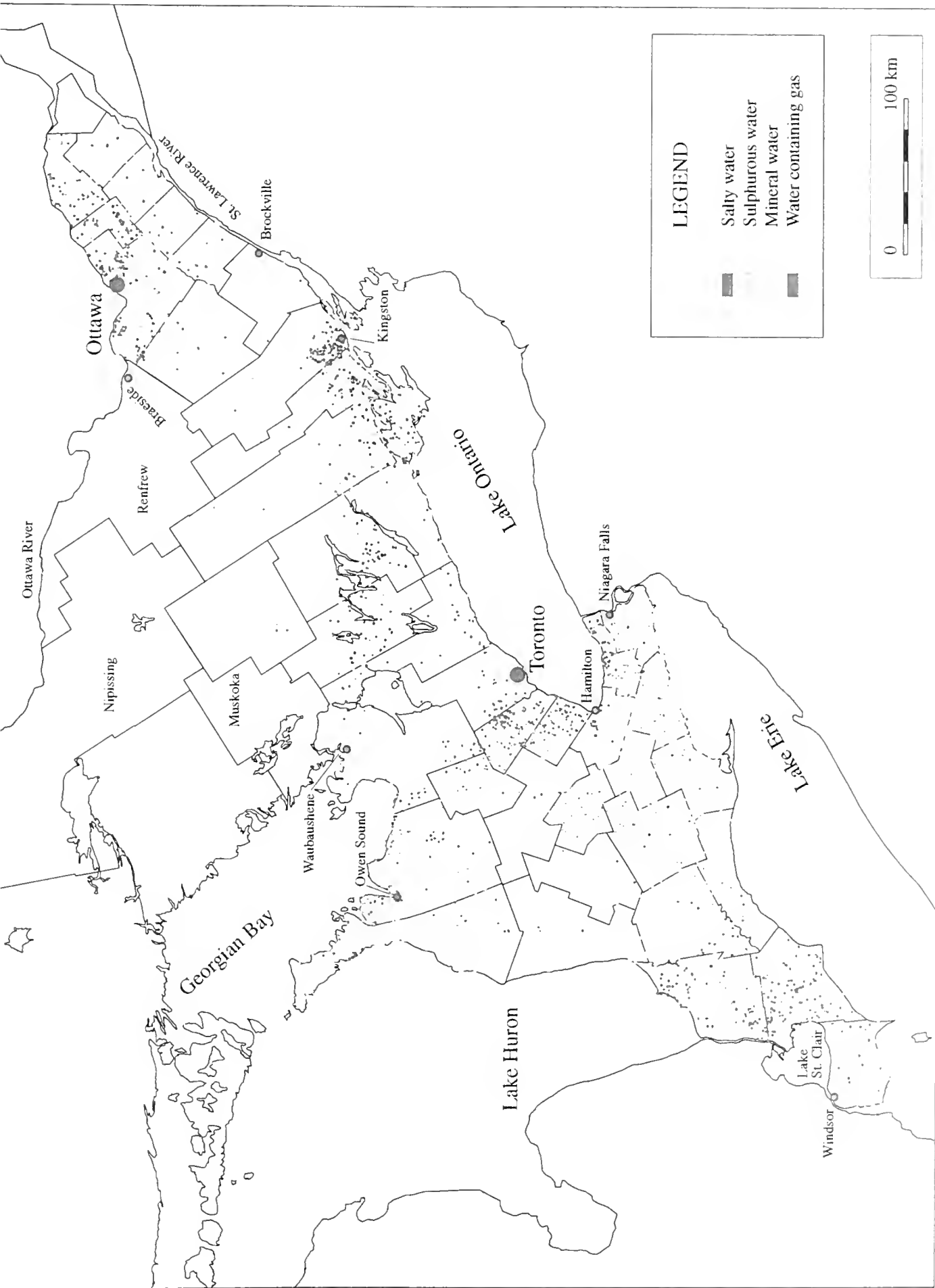


Figure 24. Bedrock wells with natural water quality problems.





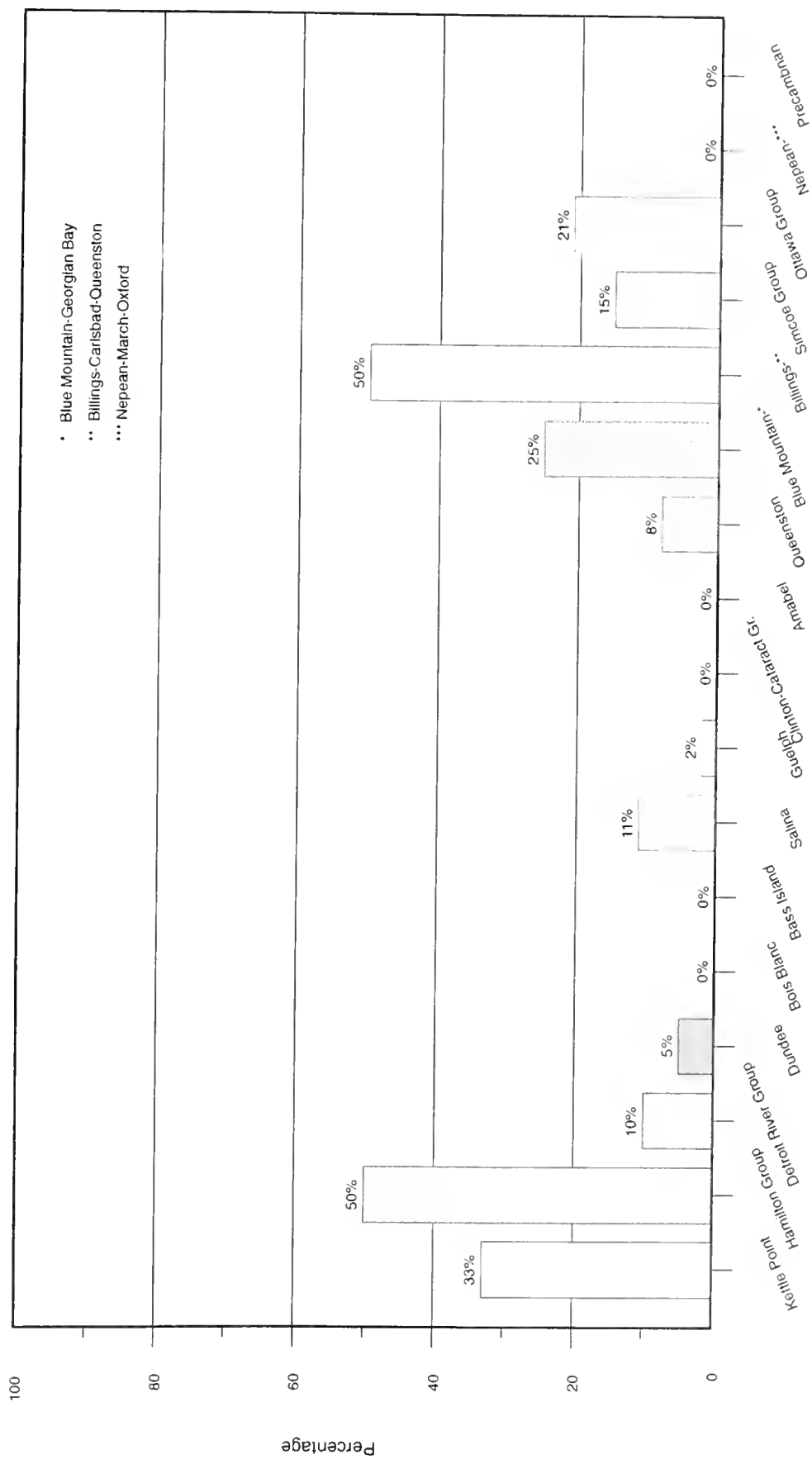


Figure 25. Percentage of samples exceeding the PDWO for sodium (200mg/l).



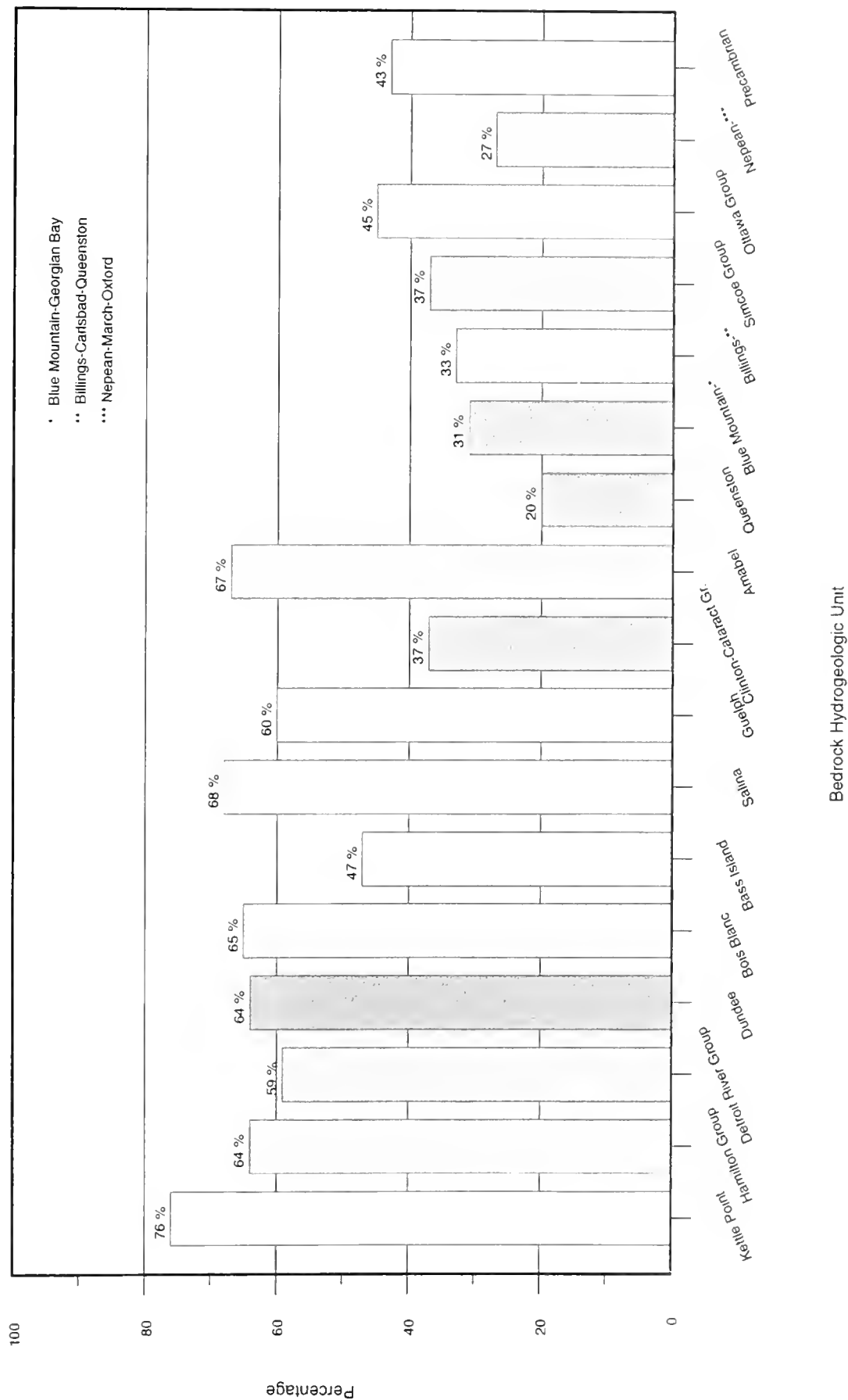


Figure 26. Percentage of samples exceeding the PDWO for iron (0.3 mg/l).



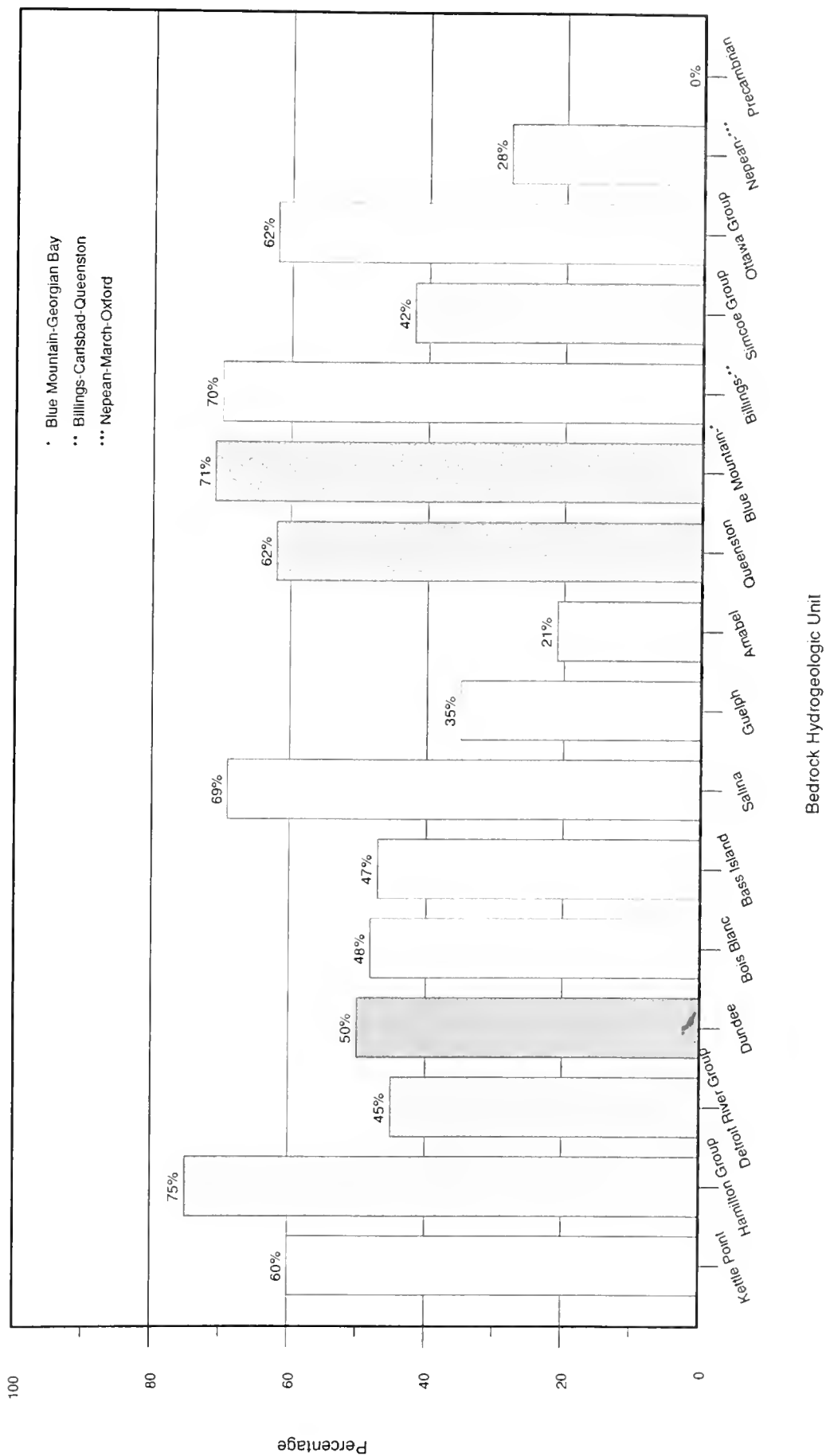


Figure 27. Percentage of samples exceeding the PDWO for total dissolved solids (500 mg/l).



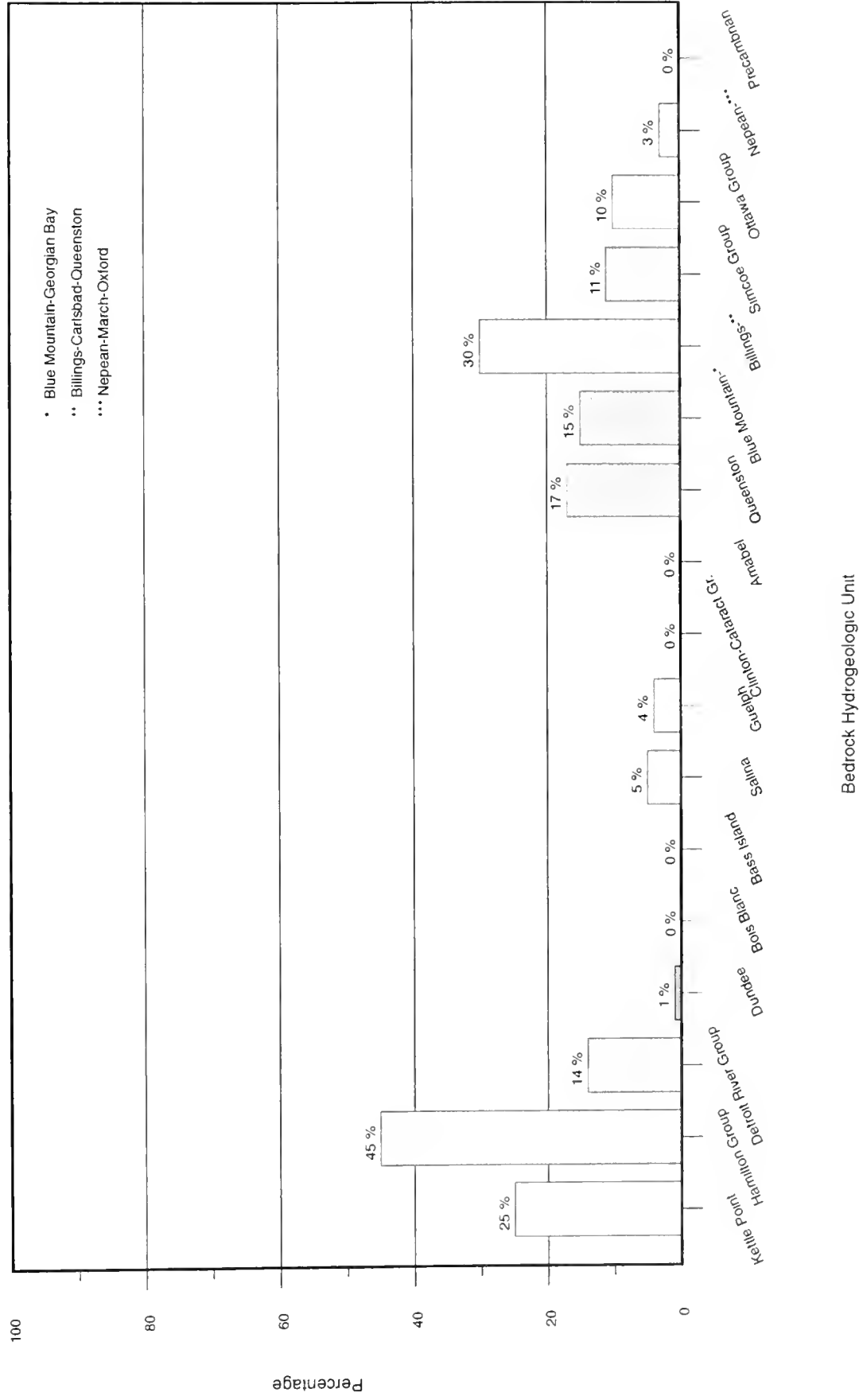


Figure 28. Percentage of samples exceeding the PDWO for chloride (250 mg/l).





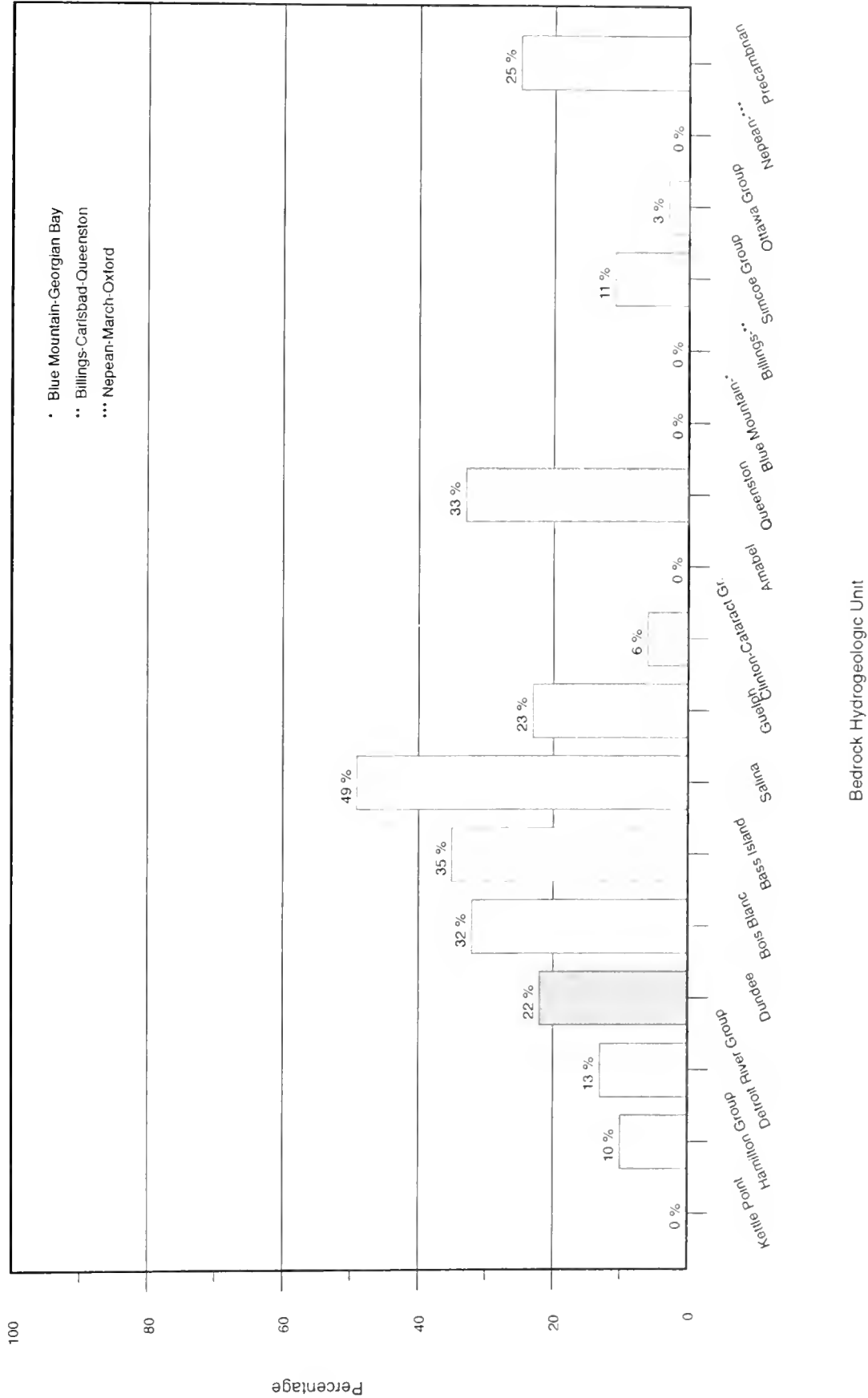


Figure 29. Percentage of samples exceeding the PDWO for sulphate (250mg/l).



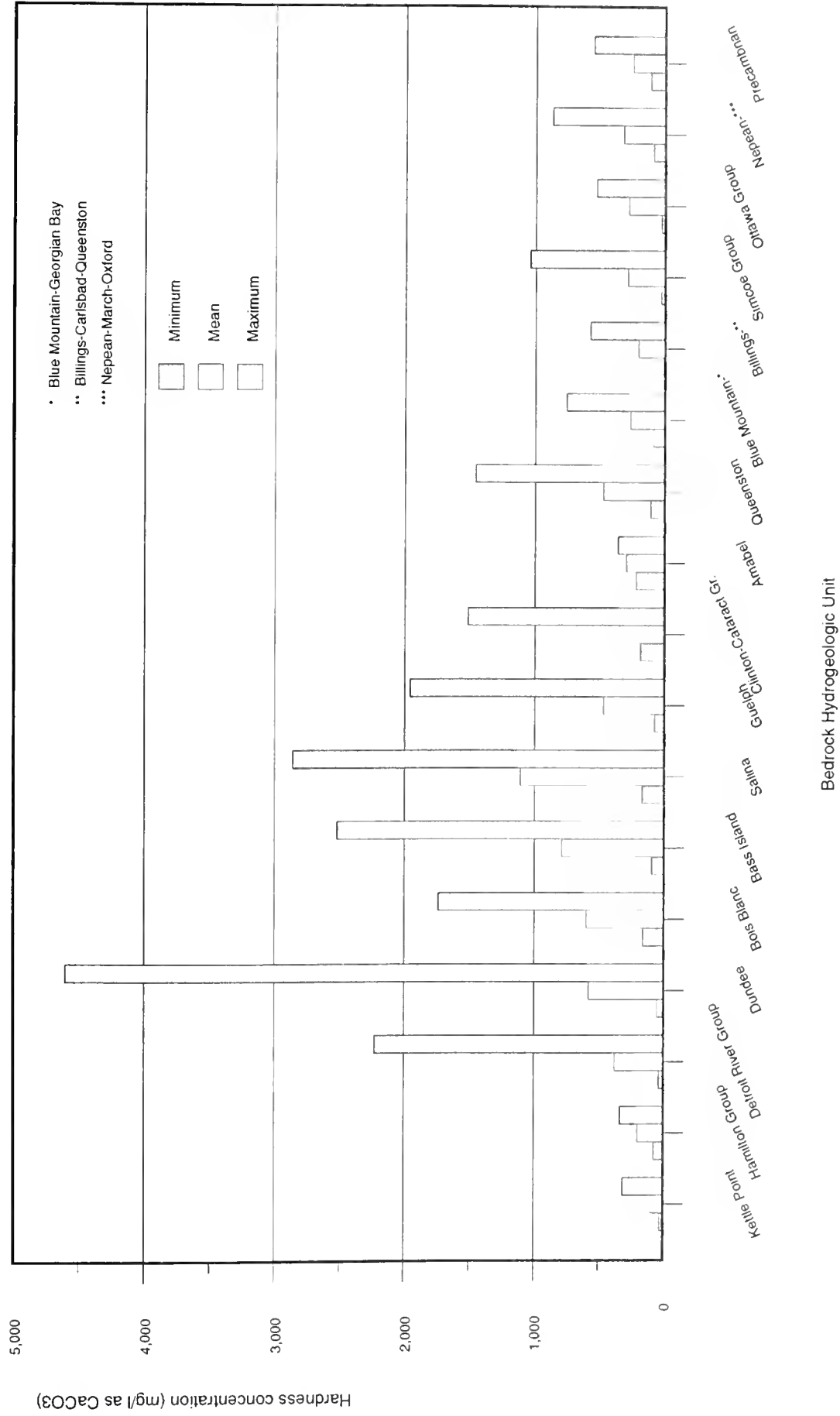


Figure 30. Minimum, mean and maximum levels of hardness for various bedrock hydrogeologic units.



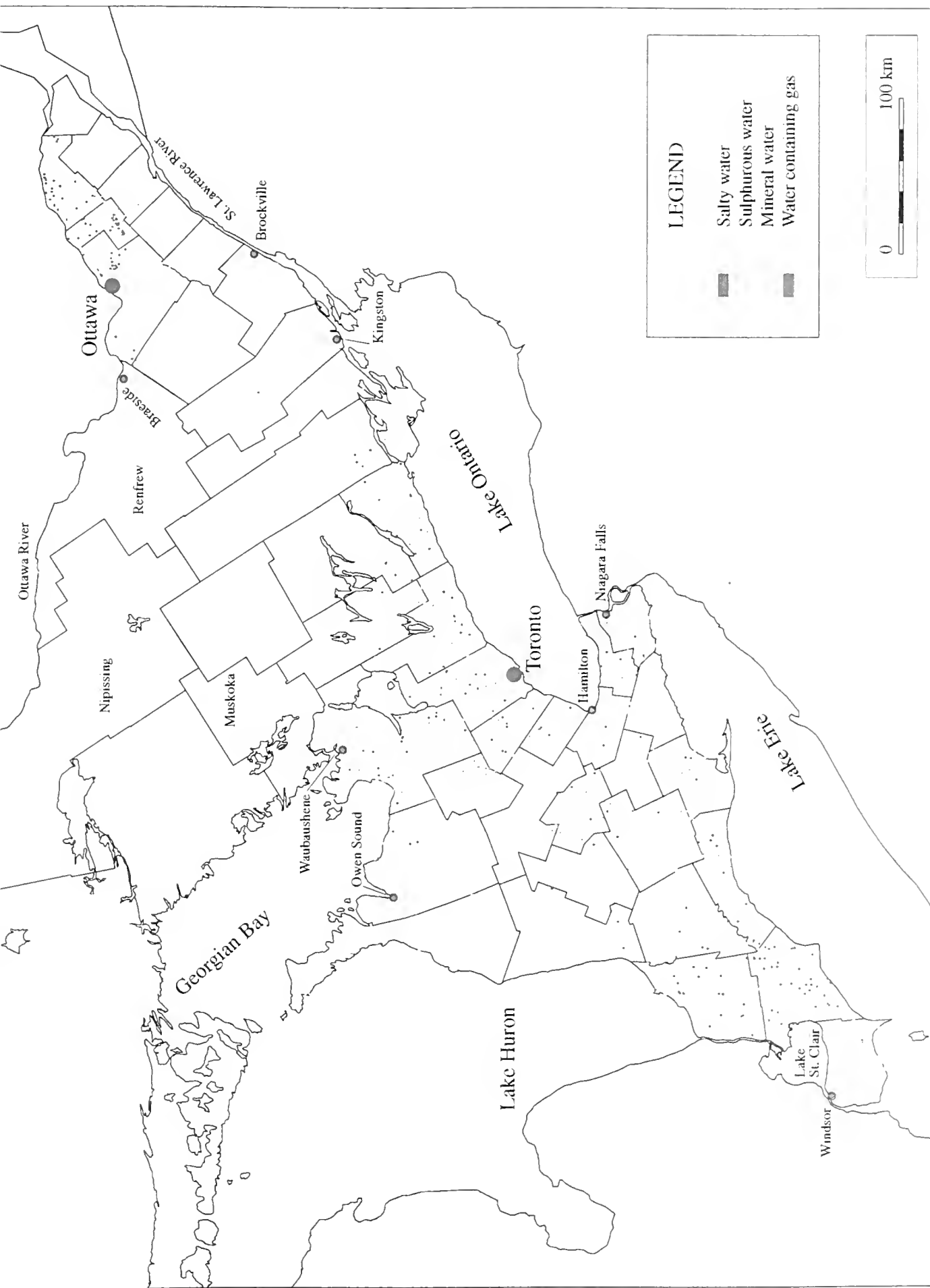


Figure 31. Overburden wells with natural water quality problems.





